Confined Space Program
For
Company Name

I. OBJECTIVE

The purpose of ***Company Name's*** Confined Space Program is to set procedures that will ensure workers safe entry into confined spaces and permit-required confined spaces to perform routine tasks associated with their employment. This procedure is designed to provide the minimum safety requirements in accordance with the Occupational Safety and Health Administration's (OSHA) Confined Space Standard, 1910.146.

II. BACKGROUND

A confined space is defined as any location that is 1) large enough that an employee can enter and perform work, 2) has limited or restricted openings for entry and exit, and 3) is not intended for continuous employee occupancy. A confined space becomes a Permit-Required confined space when any of the following conditions exist in a confined space.

A. contains (or has a potential to contain) a hazardous atmosphere (flammable, explosive, toxic, not enough oxygen, etc);
B. contains a material with the potential for engulfment of an entrant;
C. has an internal configuration that could trap or asphyxiate occupants; or
D. other recognized serious safety or health hazard (such as steam, high pressure materials, live electrical parts, unguarded machinery, etc.)

III. ASSIGNMENT OF RESPONSIBILITY

A. Employer

In administering this Confined Space Program, ***Company Name*** will:

1. Monitor the effectiveness of the program.
2. Provide atmospheric testing and equipment as needed.
3. Provide personal protective equipment as needed.
4. Provide training to affected employees and supervisors.
5. Provide technical assistance as needed.
6. Preview and update the program on at least an annual basis or as needed.

B. Program Manager

Responsible Person Name is responsible for managing the Confined Space Program, and shall:

1. Ensure that a list of confined spaces at all ***Company Name*** worksites is maintained.
2. Ensure that canceled permits are reviewed for lessons learned.
3. Ensure training of personnel is conducted and documented.
4. Coordinate with outside responders.

5. Ensure that equipment is in compliance with standards.
6. Ensure that the ***Responsible Person Name or Job Title*** in charge of confined space work will:

    a. Ensure requirements for entry have been completed before entry is authorized.
    b. Ensure confined space monitoring is performed by personnel qualified and trained in confined space entry procedures and the monitoring equipment.
    c. Ensure a list of monitoring equipment and personnel qualified to operate the equipment is maintained by the Safety and Occupational Health Office.
    d. Ensure that the rescue team has simulated a rescue in a confined space within the past twelve (12) months.
    e. Know the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure.
    f. Complete a permit.
    g. Determine the entry requirements.
    h. Require a permit review and signature from the authorized Entry Supervisor.
    i. Notify all involved employees of the permit requirements.
    j. Post the permit in a conspicuous location near the confined space entrance.
    k. Renew the permit or have it reissued as needed (a new permit is required every shift).
    l. Determine the number of Attendants required to perform the work.
    m. Ensure all Attendant(s) are given the required training and know how to communicate with the entrants and how to obtain assistance.
    n. Post any required barriers and signs.
    o. Remain alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment).
    p. Change and reissue the permit, or issue a new permit as necessary.
    q. Ensure periodic atmospheric monitoring is done according to permit requirements.
    r. Ensure that personnel doing the work and all support personnel have received the required training and adhere to all permit requirements.
    s. Ensure the permit is canceled when the work is done.
    t. Ensure the confined space is safely closed and all workers are cleared from the area.
    u. Ensuring that rescue team members have current certification in first aid and cardiopulmonary resuscitation (CPR).

C. Entry Supervisors

Responsible Person(s) will serve as the Entry Supervisor(s), and will be qualified and authorized to approve confined space entry permits. The Entry Supervisor(s) will be responsible for:

1. Determining if conditions are acceptable for entry.
2. Authorizing entry and overseeing entry operations.
3. Terminating entry procedures as required.

4. Making sure a trained Attendant is present at all confined space entries.
5. Ensuring measures are in place to keep unauthorized personnel clear of the area.
6. Checking the work at least twice a shift to verify and document permit requirements are being observed (more frequent checks will be made if operations or conditions are anticipated that could affect permit requirements).
7. Ensuring that necessary information on chemical hazards is kept at the worksite for the employees or rescue team.
8. Ensuring a rescue team is available at the time of the confined space entries and instructed in their rescue duties (i.e., an onsite team or a prearranged outside rescue service).

D. Attendants

Responsible Person(s) will function as an Attendant(s) and shall be stationed outside of the confined workspace. The Attendant(s) will:

1. Be knowledgeable of, and be able to recognize potential confined space hazards.
2. Maintain a sign-in/sign-out log with a count of all persons in the confined space, and ensure all entrants sign in and out.
3. Monitor surrounding activities to ensure the safety of personnel.
4. Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
5. Order personnel to evacuate the confined space if he/she:

    a. observes a condition that is not allowed on the entry permit;
    b. notices the entrants acting strangely, possibly as a result of exposure to hazardous substances;
    c. notices a situation outside the confined space which could endanger personnel;
    d. notices a hazard within the confined space that has not been previously recognized or taken into consideration;
    e. must leave his/her work station; or
    f. must focus attention on the rescue of personnel in some other confined space that he/she is monitoring.

6. Immediately summon the Rescue Team if crew rescue becomes necessary.
7. Keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of an unauthorized entry.

E. Rescue Team

The Rescue Team members will:

1. Complete a training drill using mannequins or personnel in a simulation of the confined space prior to the issuance of an entry permit for any confined space and at least annually.
2. Respond immediately to rescue calls from the Attendant or any other person recognizing a need for rescue from the confined space.
3. In addition to emergency response training, receive the same training as that required of the authorized entrants.

4. Have current certification in first aid and CPR.

F. Entrants/Affected Employees

Employees who are granted permission to enter a confined space will:

1. Read and observe the entry permit requirements.
2. Remain alert to the hazards that could be encountered while in the confined space.
3. Properly use the personal protective equipment that is required by the permit.
4. Immediately exit the confined space when:

    a. they are ordered to do so by an authorized person;
    b. they notice or recognize signs or symptoms of exposure;
    c. a prohibited condition arises; or
    d. an automatic alarm system sounds.

5. Alert Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist.

IV. TRAINING

Company Name will provide training so that all employees whose work is regulated by this Confined Space Program acquire the understanding, knowledge, and skills necessary for the safe performance of their duties in confined spaces.

A. Training Frequency

Responsible Person will provide training to each affected employee:

1. Before the employee is first assigned duties within a confined space and annually;
2. Before there is a change in assigned duties;
3. When there is a change in permit space operations that presents a hazard for which an employee has not been trained; and
4. When ***Company Name*** has reason to believe that there are deviations from the confined space entry procedures required in this program, or that there are inadequacies in the employee's knowledge or use of these procedures.

The training must establish employee proficiency in the duties required in this program, and must introduce new or revised procedures, as necessary, for compliance with this program.

B. General Training

All employees who will **enter** confined spaces will be trained in the following entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue will be adequately trained in their functional duties prior to any confined space entry. Training will include:

1. Explanation of the general hazards associated with confined spaces.
2. Discussion of specific confined space hazards associated with the facility, location, or operation including the signs and symptoms of overexposure and the consequences of exposure to the hazards.
3. Proper use, limitations, and reasons for use of personal protective equipment and other safety equipment required for entry into confined spaces.
4. Explanation of permits and other procedural requirements for conducting a confined space entry.
5. A clear understanding of what conditions would prohibit entry.
6. Procedures for responding to emergencies including non-entry rescue and related equipment use.
7. Duties and responsibilities of the confined space entry team.
8. Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers.
9. The method(s) for alerting the Attendant of concerns or situations in the space and the procedures to follow when the attendant orders evacuation, an automatic alarm is activated, or if they perceive that they are in danger.

Refresher training will be conducted at least annually when entries occur on a regular basis or more often as needed to maintain employee competence in entry procedures and precautions.

C. Specific Training

1. Training for **atmospheric monitoring personnel** shall include proper use of monitoring instruments, including instruction on the following:

    a. proper use of the equipment;
    b. calibration of equipment;
    c. sampling strategies and techniques; and
    d. exposure limits (PELs, TLVs, LELs, UELs, STELs, etc.).

2. Training for **Attendants** must include the following:

    a. How to recognize potential permit space hazards, and monitor activities inside and outside the permit space to determine if it is safe for entrants to remain in the space.
    b. How to maintain effective and continuous contact with entrants.
    c. How to continuously maintain an accurate count of all persons in the permit space.
    d. Procedures to summon rescue and other emergency services as soon as he/she determines that entrants need to escape the space.
    e. That they must remain outside the permit space(s) at all times during entry operations unless they are relieved by another trained and approved attendant.
    f. How to order entrants to evacuate the space when the attendant:
        i. Observes a condition which is not allowed in the entry permit system;
        ii. Detects behavioral effects consistent with exposure to the hazards in the space;
        iii. Detects a situation outside the space which could endanger the entrants;

iv. Detects an uncontrolled hazard in the space;
v. If monitoring entry in more than one space and must focus attention on the rescue of entrants from one of those other spaces; and
vi. Must leave the workstation.

g. Take the following actions when unauthorized persons approach or enter a permit space while an entry is underway:
i. Warn them away from the space;
ii. Request their exit immediately if they have entered the space; and
iii. Inform the authorized entrants, and any other persons designated by the employer, that other persons have entered the space.

h. Properly use any rescue equipment provided for attendant use and perform any other assigned rescue and emergency duties, without entering the space.

3. Training for **Emergency Response Personnel** must include:

a. All the training that is given to the authorized entrants.
b. Rescue plans and procedures developed for each confined space that is anticipated to be encountered.
c. Use of emergency rescue equipment.
d. First aid and CPR techniques.

D. Verification of Training

Periodic assessment of the effectiveness of employee training will be conducted by ***Responsible Person***. Training sessions will be repeated as often as necessary to maintain an acceptable level of personnel competence but in no case more that one year before a confined space entry.

V. IDENTIFICATION OF HAZARDS AND EVALUATION OF CONFINED SPACES

A. Survey

Responsible Person will ensure a survey of the worksite is conducted to identify all confined spaces. The purpose of the survey is to develop an inventory of those locations and/or equipment at ***Company Name*** that meet the definition of a confined space, the hazards of each space, power sources connected to the space, and the chemicals and materials likely to be in or affecting each space. This information will be communicated to personnel, and appropriate confined space entry procedures will be developed prior to entry. The initial surveys will include air monitoring (when appropriate) to determine the air quality in the confined spaces. The potential for the following situations will be evaluated by ***Responsible Person***:

1. flammable or explosive potential;
2. oxygen deficiency potential;
3. presence of toxic and corrosive materials;
4. presence of materials (grain, dust, water, etc.) in the space;
5. presence of difficult 'terrain' in the space (sloping walls, equipment that entrants may be required to climb over or under, pits, twisting corridors, etc.); and
6. presence of other known hazards (live electrical parts, unguarded machinery, etc.).

B. Hazard Reevaluation

The ***Responsible Person*** will identify and reevaluate hazards based on possible changes in activities or other physical or environmental conditions that could adversely affect work. A master inventory of confined spaces will be maintained. Any change in designation of a confined space will be routed to all affected personnel by ***Responsible Person***.

C. Pre-Entry Hazard Assessment

A hazard assessment will be completed by ***Responsible Person(s)*** prior to any entry into a confined space. The hazard assessment should identify:

1. The sequence of work to be performed in the confined space;
2. The specific hazards known or anticipated; and
3. The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level.

No entry will be permitted until the hazard assessment has been reviewed and discussed by all persons engaged in the activity. Personnel who are to enter confined spaces will be informed of known or potential hazards associated with the confined spaces.

D. Hazard Controls

Hazard controls will be instituted to address changes in the work processes and/or working environment. Hazard controls must be able to either control the health hazards by eliminating the responsible agents, reduce health hazards below harmful levels, or prevent the contaminants from coming into contact with the workers.

The following order of precedence will be followed in reducing confined space risks.

1. Engineering Controls

Engineering controls eliminate or reduce the hazard by using some equipment to remove the hazard or shield it from the employees.

Ventilation is one of the most common engineering controls used in confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space will be ventilated until the atmosphere is within the acceptable ranges. Ventilation must be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range. When ventilation is not possible or feasible, alternate protective measures or methods to remove air contaminants and protect occupants will be determined by ***Responsible Person*** prior to authorizing entry.

When conditions necessitate and can accommodate continuous forced-air ventilation, the following precautions will be followed:

a. Employees will not enter the space until the forced-air ventilation has eliminated any hazardous atmosphere and this fact is verified.
b. Forced-air ventilation will be directed so as to ventilate the immediate areas where an employee is or will be present within the space.
c. Continuous ventilation will be maintained until all employees have left the space.
d. Air supply or forced-air ventilation will originate from a clean source, and always upwind from all entrances to the space.

2. Work Practice or Administrative Controls

Work practice or administrative controls eliminate or reduce the hazard through changes in the work practices during the operation (i.e., rotating workers, reducing the amount of worker exposure time, and housekeeping).

3. Personal Protective Equipment (PPE)

If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE will be used to keep employees safe from the hazards. (If an explosive atmosphere cannot be eliminated or reduced to a safe level, other measures will be taken, as the use of PPE will not guarantee employee safety.) ***Responsible Person(s)*** will determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable standards will be selected in accordance with the requirements of the job to be performed.

VI. ENTRY PERMITS

The Confined Space Entry Permit is the most essential tool for assuring safety during entry in confined spaces with known hazards, or with unknown or potentially hazardous atmospheres. The entry permit process guides the supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions. Before each entry into a confined space, an entry permit will be completed by ***Responsible Person***. ***Responsible Person*** will then communicate the contents of the permit to all employees involved in the operation, and post the permit conspicuously near the work location. A standard entry permit will be used for all entries.

A. Key Elements of Entry Permits

A standard entry permit must contain all the following items:

1. Space to be entered.
2. Purpose of entry.
3. Date and authorized duration of the entry permit.
4. Name of authorized entrants within the permit space.
5. Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems).
6. Name(s) of personnel serving as Attendant(s) for the permit duration.
7. Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry.

8. Hazards of the permit space to be entered.
9. Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces).
10. Acceptable entry conditions quantified with regard to the hazards identified in the permit space, which must be maintained during entry;.
11. Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed.
12. Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
13. Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry.
14. The personal protective equipment, such as respirators, clothing, retrieval lines and other rescue equipment to be used on-site, etc. provided in order to ensure employee safety;
15. Any other information necessary for the circumstances of the particular confined space that will help ensure employee safety.
16. Additional permits, such as for hot work, that have been issued to authorize work on the permit space.

B. Permit Scope and Duration

A permit is only valid for one shift. For a permit to be renewed, the following conditions must be met before each reentry into the confined space:

1. Atmospheric testing will be conducted and the results must be within acceptable limits. If atmospheric test results are not within acceptable limits, precautions to protect entrants against the hazards should be addressed on the permit and should be in place.
2. ***Responsible Person*** will verify that all precautions and other measures called for on the permit are still in effect.
3. Only operations or work originally approved on the permit may be conducted in the confined space.

A new permit will be issued whenever changing work conditions or work activities introduce new hazards into the confined space. ***Responsible Person*** will retain all canceled entry permits for at least one (1) year to facilitate the review of the Confined Space Entry Program. Any problems encountered during an entry operation should be noted on the permit so an effective program review can facilitate appropriate revisions to the confined space permit program.

VII. ENTRY PROCEDURES

When entry into a confined space is necessary, either the Entry Supervisor or ***Responsible Person*** may initiate entry procedures, including the completion of a confined space entry permit. Entry into a confined space shall follow the standard entry procedure below.

A. Prior to Entry

The entire confined space entry permit must be completed before an entry can begin. Entry will be allowed only when all requirements of the permit are met and it is reviewed and

signed by the Entry Supervisor. The following conditions must be met prior to standard entry:

1. All personnel involved or affected will be trained to establish proficiency in the duties that will be performed during the confined space entry.
2. The internal atmosphere within the confined space will be tested by ***Responsible Person*** with a calibrated, direct-reading instrument.
3. Personnel will be provided with the PPE necessary for a safe entry as determined by the Entry Supervisor.
4. Atmospheric monitoring will take place during the entry. If a hazardous atmosphere is detected during entry:

    a. Personnel within the confined space will be evacuated by the Attendant(s) or Entry Supervisor.
    b. The space will be evaluated by ***Responsible Person*** to determine how the hazardous atmosphere developed; and
    c. Corrections will be made, controls will be put in place, and tests will be conducted to ensure the atmosphere is safe before employees are allowed to reenter the space.

B. Opening a Confined Space

Any conditions making it unsafe to remove an entrance cover will be eliminated before the cover is removed. When entrance covers are removed, the opening will be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent anyone from falling through the opening. This barrier or cover will protect each employee working in the space from foreign objects entering the space. If it is in a traffic area, adequate barriers will be erected.

C. Atmospheric Testing

Atmospheric test data is required prior to entry into a confined space. Atmospheric testing is required for two distinct purposes: (1) evaluation of the hazards of the permit space, and (2) verification that acceptable conditions exist for entry into that space. If a person must go into the space to obtain the needed data, then Standard Confined Space Entry Procedures must be followed. Before entry into a confined space, ***Responsible Person*** will conduct testing for hazardous atmospheres. The internal atmosphere will be tested with a calibrated, direct-reading instrument for oxygen, flammable gases and vapors, and potential toxic air contaminants, ***in that order***.

Testing equipment used in specialty areas will be listed or approved for use in such areas by ***Responsible Person***. All testing equipment must be approved by a nationally recognized laboratory, such as Underwriters Laboratories or Factory Mutual Systems.

1. Evaluation Testing

The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity. The analysis must identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and

interpretation of these data and development of the entry procedure should involve a technically qualified professional (i.e., consultant, certified industrial hygienist, registered safety engineer, or certified safety professional).

2. Verification Testing

A confined space that may contain a hazardous atmosphere must be tested for residues of all identified or suspected contaminants. The evaluation testing should be conducted with specified equipment to determine that residual concentrations at the time or testing and entry are within acceptable limits. Results of testing shall be recorded by the person performing the tests on the permit. The atmosphere shall be periodically retested ***how often*** to verify that atmospheric conditions remain within acceptable entry parameters.

3. Acceptable Limits

The atmosphere of the confined spaces will be considered to be within acceptable limits when the following conditions are maintained:

a. Oxygen: 19.5 percent to 23.5 percent;
b. Flammability: less than 10 percent of the Lower Flammable Limit (LFL); and
c. Toxicity: less than recognized American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits or other published exposure levels [i.e., OSHA Permissible Exposure Limits (PELs) or Short Term Exposure Limits (STELs) or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)].

D. Isolation and Lockout/Tagout Safeguards

All energy sources that are potentially hazardous to confined space entrants will be secured, relieved, disconnected, and/or restrained before personnel are permitted to enter the confined space. Equipment systems or processes will be locked out and/or tagged out as required by the ***Company Name*** Lockout/Tagout Program [which complies with OSHA's 29 CFR 1910-147 and American National Standards Institute (ANSI) Z244.1-1982, Lockout/Tagout of Energy Sources] prior to permitting entry into the confined space. In confined spaces where complete isolation is not possible, ***Responsible Person*** will evaluate the situation and make provisions for as rigorous an isolation as practical. Special precautions will be taken when entering double-walled, jacketed, or internally insulated confined spaces that may discharge hazardous material through the vessel's internal wall.

Where there is a need to test, position, or activate equipment by temporarily removing the lock or tag or both, a procedure will be developed and implemented to control hazards to the occupants. Any removal of locks, tags, or other protective measures will be done in accordance with the ***Company Name*** Lockout/Tagout Program.

E. Ingress/Egress Safeguards

Means for safe entry and exit will be provided for all confined spaces to be entered. Each entry and exit points will be evaluated by ***Responsible Person*** to determine the most

effective methods and equipment that will enable employees to safely enter and exit the confined space.

Appropriate retrieval equipment or methods will be used whenever a person enters a confined space. Use of retrieval equipment may be waived by the ***Responsible Person(s)*** if use of the equipment increases the overall risks of entry or does not contribute to the rescue. A mechanical device will be available to retrieve personnel from vertical confined spaces greater than five (5) feet in depth.

F. Warning Signs and Symbols

All confined spaces that could be inadvertently entered will have signs identifying them as confined spaces. Signs will be maintained in a legible condition and will contain a warning that a permit is required before entry. Accesses to all confined spaces will be prominently marked.

VIII. EMERGENCY RESPONSE

A. Emergency Response Plan

Responsible Person will maintain a written plan of action that has provisions for conducting a timely rescue of individuals within a confined space, should an emergency arise. The written plan will be kept onsite where the confined space work is being conducted. All affected personnel will be trained on the Emergency Response Plan.

B. Retrieval Systems and Methods of Non-Entry Rescue

Retrieval systems must be available and be used for non-entry rescue when an authorized person enters a vertical permit space, unless such equipment increases the overall risk of entry, or the equipment would not contribute to the rescue of the entrant. Retrieval systems must have a chest or full-body harness and a retrieval line attached at the center of the back near shoulder level or above the head. If harnesses are not feasible, or would create a greater hazard, wristlets may be used in lieu of the harness. The retrieval line must be firmly fastened outside the space so that rescue can begin as soon as anyone is aware that retrieval is necessary. A mechanical device must be available and attached to retrieve personnel from vertical confined spaces more than five (5) feet deep.